

urSQL[®]

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Introduction/Overview

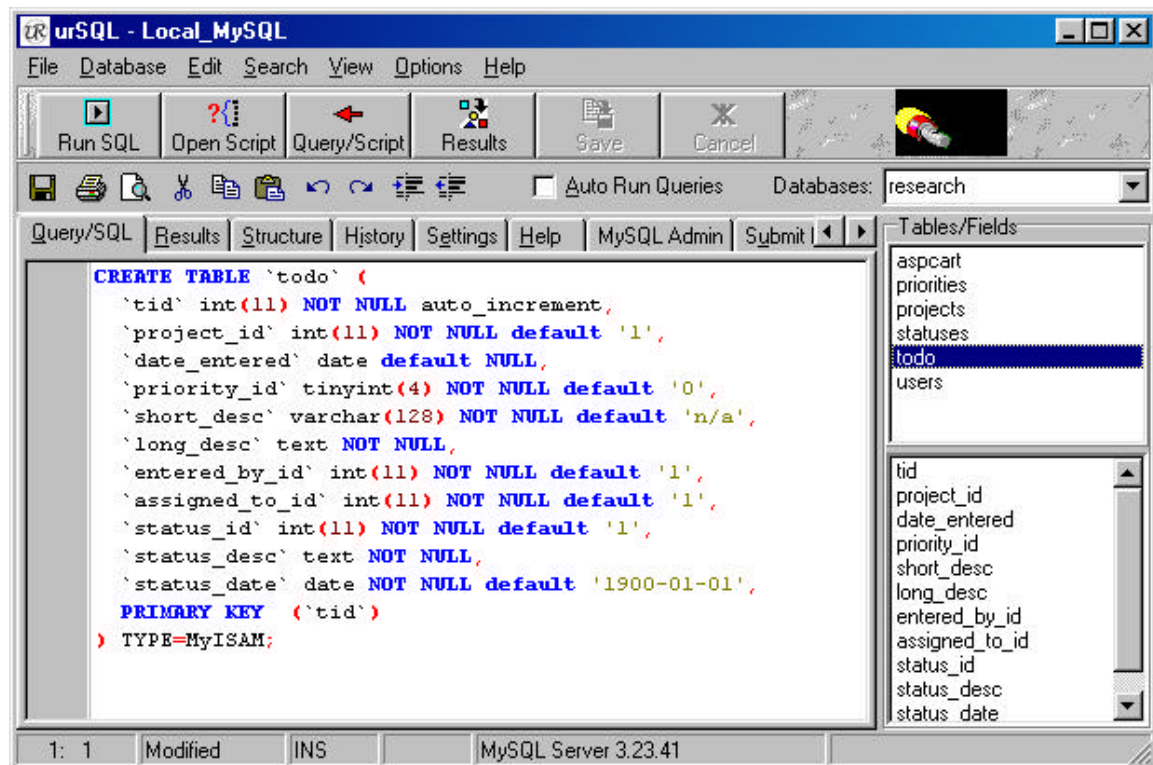
This section presents an overview of urSQL and introduces the basic functions and features.

What is urSQL?

urSQL is an SQL query tool that can be used to submit queries against a database and view result sets. Most modern Relational Database Management Systems (RDBMS) have a custom interface for interacting with the server. For example, Microsoft SQL Server 7.x comes with a tool called the "Query Analyzer", Oracle comes with "SQL*Plus", and MySQL comes with the MySQL command-line utility just to mention a few. Each of these interfaces are vastly different in both appearance and functionality. urSQL allows connection to all of the aforementioned databases with the same interface.

Using the same interface to query a Microsoft SQL Server 7.x database and a MySQL database provides multiple benefits to the user:

- Provides consistent access to all databases
- Reduces learning curve when switching between RDBMSs
- Increases productivity
- Etc.



The unique design of urSQL provides direct and simple access to Tables and Columns when building queries. Table structures, result sets, and a query history are always just a click away.

Features

urSQL offers several "developer-enabling" features designed to help SQL developers efficiently and effectively accomplish sql-related tasks.

Same Interface, Different Databases

urSQL can be used to connect to a variety of different databases. The most common include: MySQL, MSSQL, MS Access, and Paradox. urSQL is also known to work with Oracle 8i, PostgreSQL, and Interbase.

Customizable SQL Syntax Highlighting

Modify colors and styles for SQL keywords. A few items that can be controlled include Reserved Words, Comments, Identifiers, Strings, Numbers, Symbols, Selected Text, Etc.

Custom Text Editor Settings

Custom settings and options include Auto Correct, Key Assignments, Code Templates, and many more.

Simple SQL Code Generation

Basic queries, like "SELECT * FROM TABLE" can be auto-generated with a click of the mouse.

Result Set Grid

Query results can be returned to a result set grid for convenient viewing and in some cases editing/updating.

Query History

Keep track of submitted queries.

Export Result Sets

Query results can be exported to a text file or various other file formats.

Script Builder

Quickly generate CREATE TABLE scripts for MySQL, MSSQL, and MS Access tables.

Code Templates

Common code fragments can be added to a code templates library and later retrieved saving repetitive keystrokes.

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Setup/Installation

This section describes the download and installation process.

System Requirements

urSQL runs on Microsoft Windows. urSQL is known to work with the following versions of Microsoft operating systems:

- Windows 95
- Windows 98
- Windows NT 4.0
- Windows 2000
- Windows XP

MDAC

urSQL requires the presence of the Microsoft Data Access Components (MDAC). urSQL is known to work with the following versions of MDAC:

- 2.1 GA
- 2.6 RTM

ODBC

Microsoft's implementation of the Open Database Connectivity API (aka ODBC) must be installed in order to use urSQL. urSQL uses ODBC Data Sources to connect to a variety of different RDBMSs.

Vendor-specific ODBC drivers are required to connect to each specific database system. For example, in order to connect to MySQL, the MyODBC driver must be installed.

Vendor Library Files

Some RDBMS vendors require specific libraries for accessing their database. For example, Microsoft SQL Server requires that the MSSQL Client libraries are loaded on each machine that will connect to the server. These files must be obtained from the RDBMS vendor and are usually shipped with the vendor's product.

Getting urSQL

urSQL can be downloaded from the Urban Research web site at:

<http://www.urbanresearch.com/ursql/download.html>

There are typically two downloads for urSQL, the Full Installation and the Executable Only.

Full Installation

The Full Installation must be run the first time urSQL is installed on a computer. The setup program installs the basic libraries and support files necessary to run urSQL (except the libraries and support files listed in the System Requirements section).

If you don't have a copy of urSQL installed on your computer, you must run the Full Installation in order to use urSQL.

EXE Only

In order to save bandwidth and shorten download times, the Exe Only download simply includes the latest version of the urSQL executable program itself (no support files or libraries are included).

The Exe Only download should only be used if you've already run the Full Installation once. Once you've run the Full Installation, subsequent upgrades can be installed by simply downloading and unzipping the Exe Only.

Installing urSQL

The Full Installation uses an install program to setup urSQL on your computer. To install urSQL using the Full Installation:

1. Download the Full Installation
2. Unzip the downloaded file
3. Launch the Setup.exe
4. Follow the prompts to complete the setup

Please note the System Requirements section above. MDAC, ODBC, and appropriate RDBMS vendor file must be present before you can run urSQL.

If you're simply upgrading to the latest version of urSQL and you already have a working installation, you can download the Exe Only. To install the Exe Only, simply unzip the executable to the urSQL Install Directory. The urSQL Install Directory is the directory where you installed urSQL (the default is \Program Files\Urban Research\ursql\).

Registering urSQL

The unregistered version of urSQL is fully-operational and comes with no functional limits. The unregistered version differs from the registered version in the following ways:

In the unregistered version,

- the main caption displays the string "[Unregistered]".
- the Stats/Log page displays a red bar with the text string "Unregistered".
- the About box displays the string "*** Unregistered ***".
- an unregistered message is displayed when submitting SQL after the first 50 queries.
- logging cannot be turned off.

urSQL can be registered by going to: <http://www.urbanresearch.com/ursql/register>.

urSQL Tour

This section explains how to use the basic features of urSQL and gives you a quick tour of the interface.

Launching urSQL

The default installation adds a shortcut to the  urSQL Utility in the Programs Menu. To start urSQL from this shortcut:

- On the Windows Desktop, click Start -> Programs ->  urSQL Utility.

urSQL can also be launched directly from the install directory. The default location of the urSQL executable is:

- C:\Program Files\Urban Research\urSQL\ursql.exe

[Note: The install directory can be specified to a custom directory during the setup process.]

Getting Started - Connect & Query

The default behavior of urSQL is to display a Connect Database dialog when the program is started. The Connect Database dialog is used to tell urSQL to what database server you want to connect. (The default behavior can be customized not to display the Connect Database dialog upon startup.)



By Server

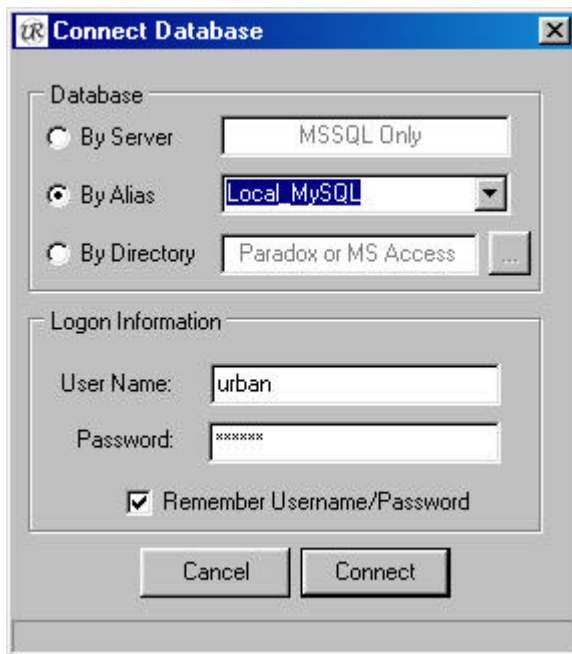
The "By Server" option is used to connect to Microsoft SQL Server 7.x databases ONLY, and requires the appropriate Microsoft Server 7.x Client libraries. This option is only used by individuals who have installed and configured the native drivers for MSSQL 7.x.

Most users will NOT use this option to connect, but will instead use the "By Alias" option.

By Alias

The default and most common way to connect urSQL to a database server is to use the "By Alias" option. To connect urSQL to a database server using the "By Alias" option:

1. Select an Alias from the Alias Drop-Down Box
2. Enter your Username and Password
3. Click Connect



By Directory

The "By Directory" option can be used to open Paradox or MS Access files (flat-file databases).

Submitting Queries

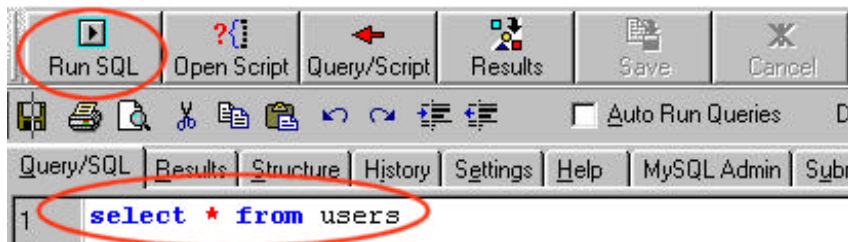
The main urSQL interface is built around a Windows-Page Control that consists of a series of Tab-like containers. The first tab on the far left, is the Query/SQL page.

The Query/SQL page holds the Query Memo. The Query Memo is a text-editor like control that automatically highlights SQL syntax. urSQL can be used to submit the contents of the Query Memo to the RDBMS and return an appropriate result set.

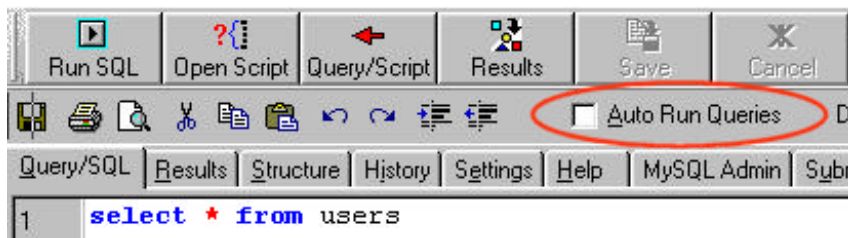
TIP: Additional Query Memos can be opened using File->New Tab.

There are Four ways to submit a query

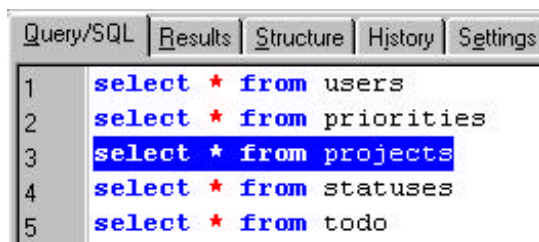
1. Type the query into the Query Memo and press the Run SQL button



2. Type the query into the Query Memo and press the Enter key (Note: the query will automatically be submitted to the database if the Auto Run Queries option is on.)



3. Type the query into the Query Memo and press the Auto-Run key (Note: the default Auto-Run key is the F5 key and is configurable by the user -- see the Settings page for further details.)
4. Highlight the relevant query text in the Query Memo and press Ctrl + E (press the E key while holding down the Ctrl key).

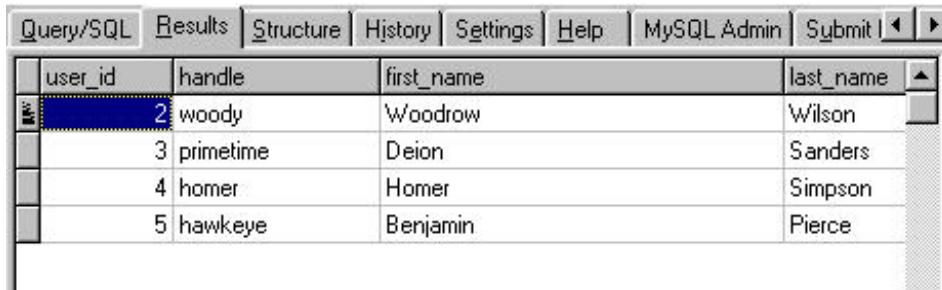


In the above example, the query text "select * from func" will be submitted to the database when Ctrl+E is pressed.

Queries can also be submitted by selecting entries from the Tables/Fields pop-up menus.

Viewing Results

When a query is submitted to the database, the Results Grid is automatically displayed.



user_id	handle	first_name	last_name
2	woody	Woodrow	Wilson
3	primetime	Deion	Sanders
4	homer	Homer	Simpson
5	hawkeye	Benjamin	Pierce

TIP: Pressing the Escape key will re-activate the last Query Memo.

CLARIFICATION → The last active Query Memo is the query memo that contains the query last submitted to the database. The Active Query Memo refers to the currently active or visible Query Memo, and the Last Active Query Memo refers to the Query Memo that was last active prior to executing the query.

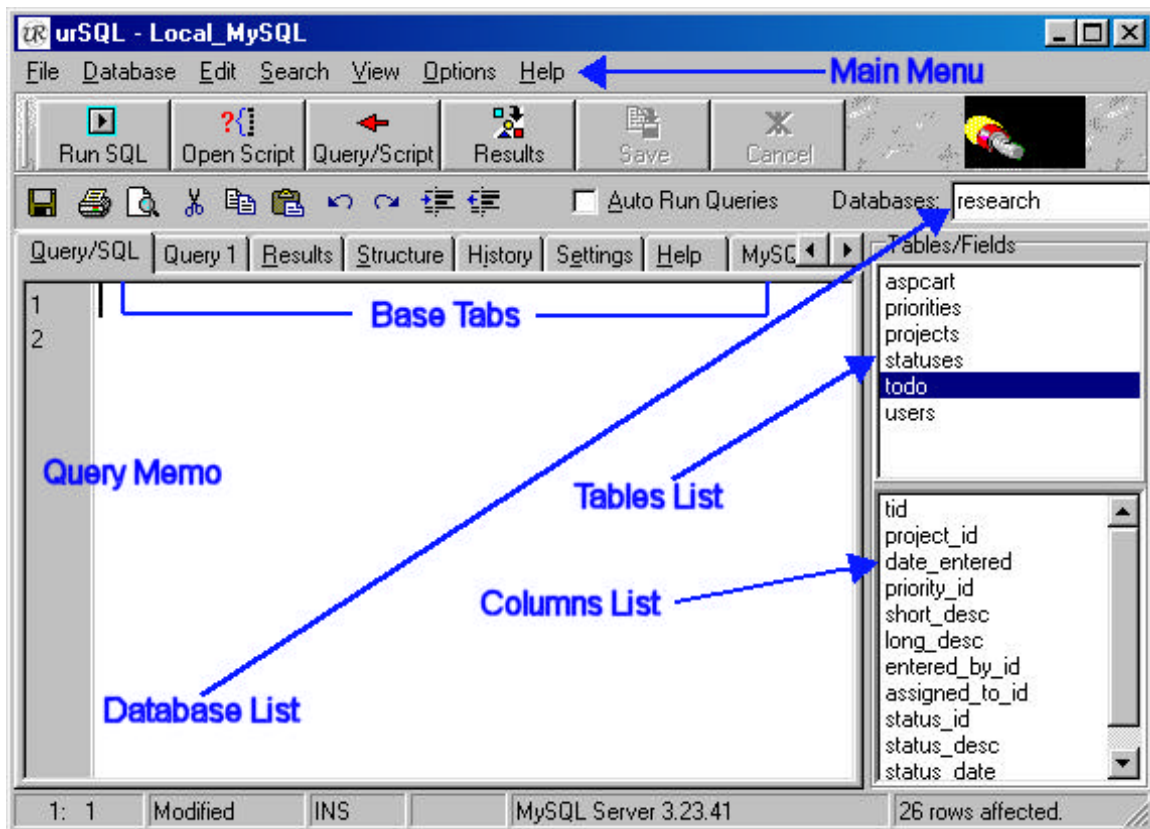
Submitting queries and viewing results are the most common activities when using urSQL. All other features of the urSQL Interface are documented in detail in the next section.

User Interface

This section describes each feature, function, and screen element of urSQL.

Quick Reference

The following graphic shows the basic elements of the urSQL interface. The rest of this document refers to the various elements in further detail.



The Main Menu

File Menu

Provides basic file operations, such as opening, saving, and printing the Query Memo text.

New Tab:

Opens a new tab control with a new Query Memo.

Open in Query Tab:

Displays an Open Dialog. The selected file will be opened in the main Query/SQL memo.



Open in New Tab:

Displays an Open Dialog. The selected file will be opened in a new Query Tab.

Clear:

Clears the text of the current Query Memo.

Print:

Displays a Print Dialog for printing of the Main Query Memo.

Print Preview:

Displays a preview window of the Main Query Memo.

Save:

Saves the current Query Memo to disk. If the file was previously opened, the contents of the Query Memo are saved to the opened filename. If the file is new or has not been saved, a Save Dialog is displayed.

Save As:

Displays a Save Dialog. The contents of the Query Memo will be saved to the specified file path.

Save All:

Save all open Query Memos.

Close:

Close the current tab.

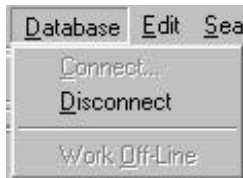
Close All:

Close all tabs (note: base tabs are never closed).

Exit:

Close the application.

Database Menu



Connect:

Opens Connect Database dialog for establishing a connection to a database server (or opening a Paradox or MS Access database file).

Disconnect:

Close the current connection.

Work Off-Line:

When selected, "Work Off-Line" indicates that you do not want to connect to a database server. Select Work Off-Line if you simply want to use urSQL as a text editor and do not want to submit live queries against a database.

If "Work Off-Line" is selected, commands that operate against the database are disabled. For example, you cannot execute a query when working off line.

Edit Menu

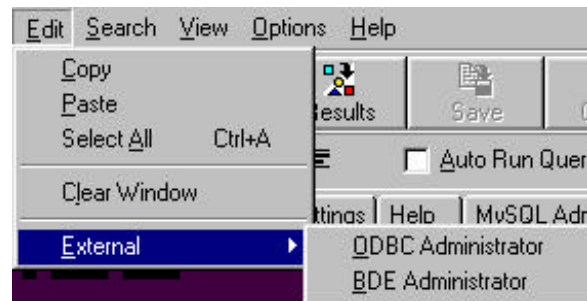
The Edit Menu provides access to basic text editing commands. Note that many of the options in the Edit Menu are only enabled when a Query Memo is active.

Copy: Copies the currently selected text to the Windows clipboard (alternative shortcut: Ctrl+C).

Paste: Pastes the current contents of the Windows clipboard to the currently active Query Memo at the cursor (alternative shortcut: Ctrl+V).

Select All: Selects all text in the current Query Memo (shortcut: Ctrl+A).

Clear Window: Clears the current Query Memo.



External: Provides shortcuts to commonly used external programs such as the Windows ODBC Administrator and (if available) the BDE Administrator (Borland Database Engine).

Search Menu

The Search Menu provides access basic text-oriented search features of each Query Memo.



Find: Opens a Find Dialog box with options for searching (shortcut: Ctrl+F).

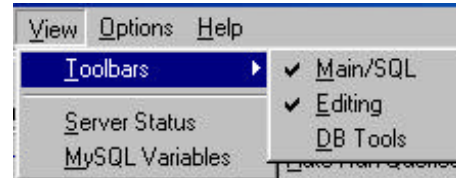
Find Again: Repeats the last find operation (shortcut: F3).

Replace: Opens a Find/Replace dialog (shortcut: Ctrl+R).

View Menu

ToolBars: Determines which toolbars will be displayed.

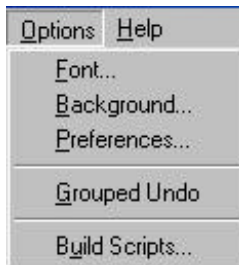
Server Status: Visible ONLY when connected to a MySQL database server -- returns status info about the current MySQL connection.



MySQL Variables: Visible ONLY when connect to a MySQL database server -- returns a list of MySQL variables and assignments.

Options Menu

Font: Opens a Font Dialog. The selected font will become the default font for the Query Memo.



Background: Opens a Color Dialog. The selected color will become the default background color for the Query Memo, Results, Structure, and History.

Preferences: Opens the Preferences Dialog. See Preferences Section of this document for further details.

Grouped Undo: Batches commands in the undo stack. If Grouped Undo is checked, several commands will be grouped as a single command and thus undone as such.

Build Scripts: Opens the Build Scripts Dialog. This option is only available for certain databases (such as MySQL and MS Access). See the Scripting Section of this document for further details.

TIP: A CREATE TABLE script can be generated by clicking on the table in the Tables List and selecting Build Script (may not be available for some database systems).

Help Menu

Script Editor Help: Activates the Help Tab. The Help Tab contains basic HTML-based documentation for urSQL.

About: Displays information about the current version and registration status of urSQL.

Register: Opens the system's default browser and attempts to connect to the urSQL Registration web page.



Transact-SQL Help: Available only if Microsoft SQL Server is installed -- attempts to open the default MSSQL Transact-SQL help file. Please note that this file is provided by Microsoft and may not be available on some systems.

SQL Tool Buttons



Run Button: Sends the text of the active Query Memo to the connected database as an SQL statement. See section Submitting Queries for further details.

Open Script: Displays and Open Dialog. The selected file will be opened in active Query Memo. See also: File Menu section.

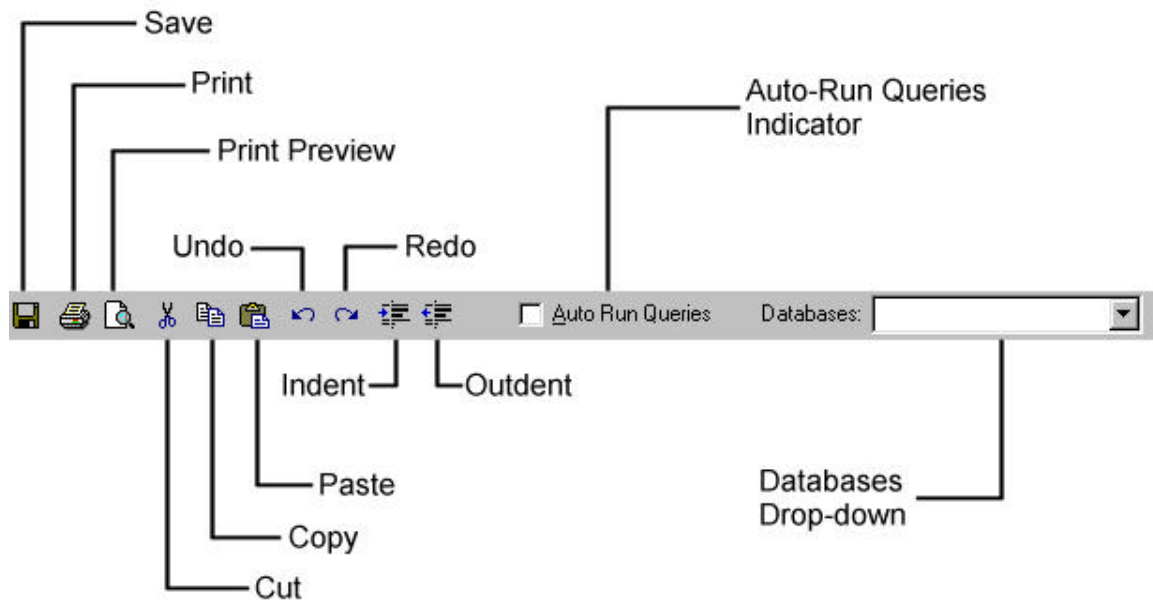
Query/Script: Displays the last active Query Memo tab.

Results: Displays the Results Tab.

Save: Currently disabled and non-functioning. Use File->Save or Ctrl+S to save the active Query Memo.

Cancel: Currently disabled and non-functioning.

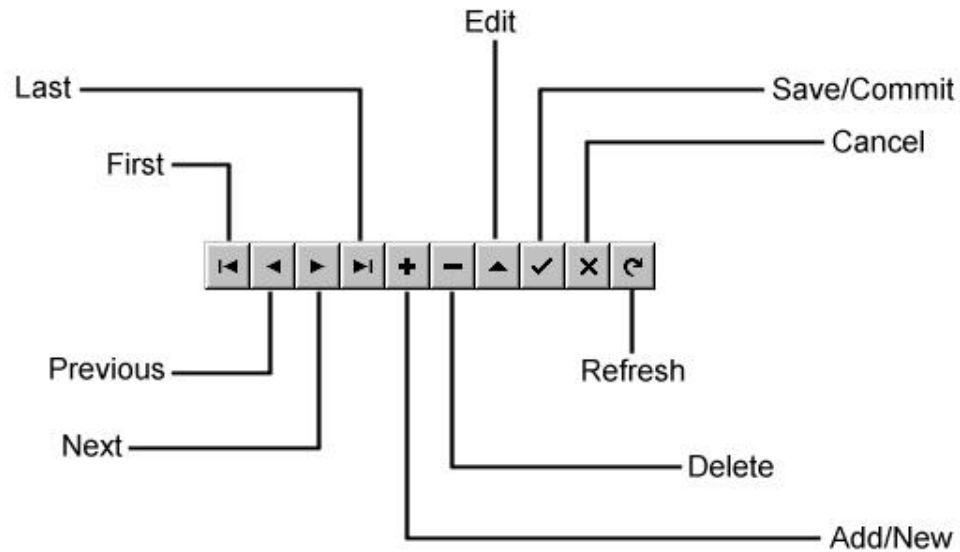
Edit Tool Bar



Save	Save the Active Query Memo text to disk.
Print	Open a print dialog to print the Active Query Memo.
Print Preview	Open a print preview window of the text in the Active Query Memo.
Cut	Removes the currently selected text from the Active Query Memo and copies the selected text to the Windows clipboard (alternative: Ctrl+X).
Copy	Copies the currently selected text to the Windows clipboard (alternative shortcut: Ctrl+C).
Paste	Pastes the current contents of the Windows clipboard to the currently active Query Memo at the cursor (alternative shortcut: Ctrl+V).
Undo	Undoes the last command.
Redo	Redo the last undo.
Indent	Indent the selected text to the next tab stop.
Outdent	Outdent the selected text to the previous tab stop.
Auto-Run	If checked, Enter key submits queries and pop-up menu queries are automatically submitted to the database.
Databases	Lists currently available databases (note: note relevant for flat-file databases such as MS Access and Paradox).

The DB Toolbar

The DB Toolbar can be used to navigate the Results Grid. Please note that some buttons are not available depending on the database server and query.

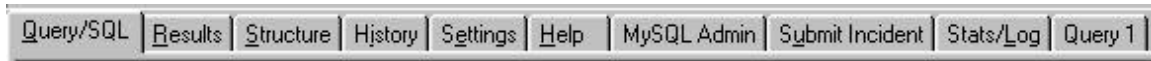


First:	Moves cursor to First record in dataset.
Previous:	Moves cursor to Previous record in dataset.
Next:	Moves cursor to Next record in dataset.
Last:	Moves cursor to Last record in dataset.
Add/New:	Adds a new row to the dataset.
Delete:	Deletes the current row from the dataset.
Edit:	Places the current row in Edit mode.
Save/Commit:	Commits changes. **
Cancel:	Cancels changes and reverts record to previous state.
Refresh:	Refreshes the dataset.

** Moving to a new row will also save changes.

TIP: To display the DB Toolbar, from the main menu select **View → Toolbars → DB Tools**.

The Base Tabs

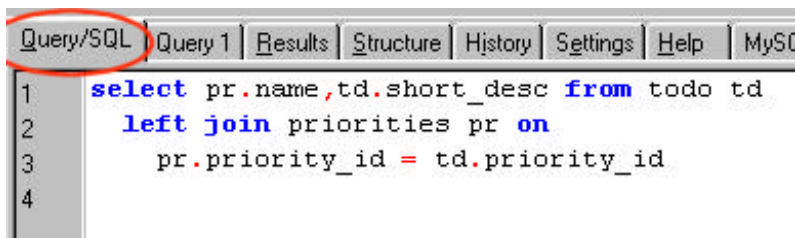


The base tabs make up the majority of the urSQL screen space. Each tab has a specific set of controls. Each tab is discussed here...

The Query/SQL Tab

The first tab on the left-hand side of the urSQL window is the Query/SQL tab, which holds the Main Query Memo. The Main Query Memo is a text-editor like memo that automatically highlights SQL keywords, reserved words, and basic syntax.

Additional Query Memos can be opened and closed, but the Main Query Memo (identified by the tab caption "Query/SQL" cannot be closed).



TIP: Multiple Query Memo's can be opened by clicking File→New Tab or by right-clicking any tab and selecting "Open New Query Tab".

The Query Memo settings are consistent for each new Query Memo opened. Further information about the settings can be found in the Query Memo Settings section and the General Settings Section.

The Results Tab

The Results Tab holds the Results Grid which displays the dataset for the submitted query (returned from the SQL server).

name	short_desc
Normal/Standard	Fix main landing page dimensions
Normal/Standard	Remove links to Webroot home.
Normal/Standard	Should be TWO pages.
Normal/Standard	One button for each trial.
Normal/Standard	Copyright info.
Normal/Standard	Product info pages...
Normal/Standard	Fix Order Total Format

Right-click the Results Grid to display a pop-up menu with options:

	short_desc
Export...	Fix main landing page dimensions
View BLOB	Remove links to Webroot home.
View Memo	Should be TWO pages.
Save Grid Layout	One button for each trial.
Restore Grid Layout ▶	Copyright info.
Reset Grid	Product info pages...
	Fix Order Total Format
	Add hotlinks to billing info.

Export:	Opens Export Dialog to allow exporting of grid contents.
View BLOB:	Opens contents of current field as an image.
View Memo:	Opens contents of current fields as a memo.
Save Grid Layout:	Saves the current grid layout (column widths).
Restore Grid Layout:	Restores a previously saved grid layout.
Reset Grid:	Resets the grid to the default column widths generated by the query.

TIP: Grid layouts for common queries can be saved and recalled. This functionality eliminates the need for constantly adjusting the column widths for the results grid.

The Structure Tab

	Field	Type	Null	Key	Default	Extra	
1	tid	int(11)		PRI		auto_increment	
2	project_id	int(11)			1		
3	date_entered	date	YES				
4	priority_id	tinyint(4)			0		
5	short_desc	varchar(128)			n/a		
6	long_desc	text					
7	entered_by_id	int(11)			1		
8	assigned_to_id	int(11)			1		

	Table	Non-Unique	Key Name	Seq	Column	Cardinality	Sub-Part
1	todo	0	PRIMARY	1	tid	A	26

The Structure Tab displays information about the currently selected table (ie the table selected in the Tables list box). Note that the structure information is unique to the connected database. The above example, is connected to a MySQL database.

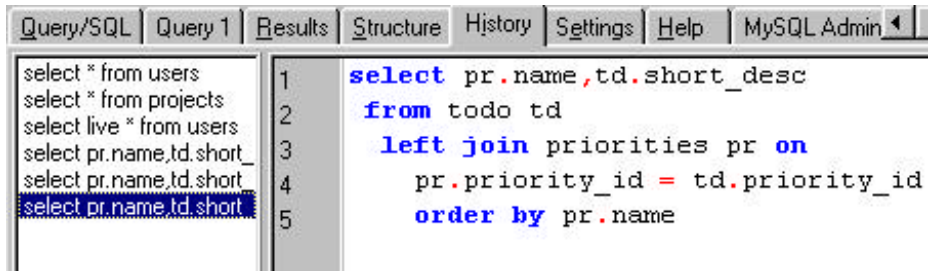
Right-clicking the Structure Grid displays the Structure Grid options menu:

Print Structure: Opens a Print Dialog for printing the contents of the Structure Grid.

Print Structure
Print to File

Print to File: Opens a Save Dialog for printing/saving the contents of the Structure Grid to a file.

The History Tab



The History Tab is made up of a list of executed queries and a Query Memo. Clicking on an entry in the list of queries will display the selected query in the Query Memo.

History options can be customized via the Settings Tab.

The Settings Tab

Editor Settings: Opens the Editor Settings dialog.

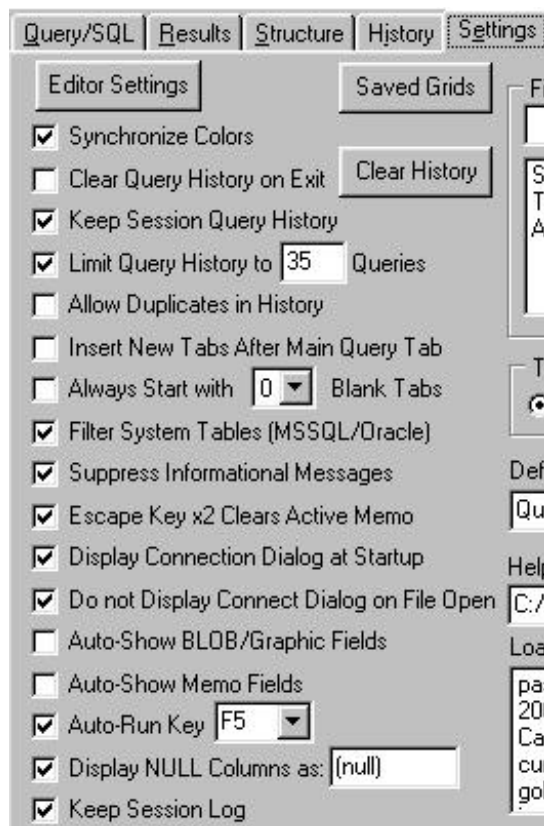
Saved Grids: Opens the Saved Grids window used for maintaining saved grids.

Synchronize Colors: If checked, all tabs, grids, and query memos will have the same background color.

Clear Query History on Exit: Clear all items in the query history list every time urSQL is closed.

Clear History: Clears the history immediately.

Keep Query History: When checked, executed queries will be saved in the Query History.



Limit Query History: Limits the number of queries stored in the query history. Maximum number is 255.

Allow Duplicates in History: When checked, all executed queries will be saved. Note: This option has no effect if the Keep Query History option is not checked.

Insert New Tabs After Main Query: Controls the insertion point of new tabs. When this option is off (default), new query tabs will be added after the Stats/Log tab.

Always Start with 0 Blank Tabs: If this option is checked and a number greater than 0 is entered, the corresponding number of new query tabs will be opened each time urSQL is launched. The maximum number of new query tabs is 5.

Filter System Tables: If checked, Microsoft SQL Server and Oracle system-level tables will not be displayed in the Tables list.

Suppress Info Messages: When checked, informational messages such as "The command did not return any rows" will not be displayed. If this option is not checked, informational

messages will be added to the active query memo.

Escape Key x2 Clears Active Memo: When checked, pressing the Escape key twice while the cursor is in a Query Memo will clear the contents of the Active Query Memo. Note: when the Results Grid is active, pressing the Escape key once will re-activate the Query Memo from which the last query was executed.

Display Connection Dialog at Startup: If checked, urSQL will automatically display the Database Connection dialog every time urSQL is launched.

Do not Display Connect Dialog on File Open: If checked, when opening a file from the Windows Explorer, the Connection Dialog will not be displayed.

Auto-Show BLOB/Graphic Fields: When checked, columns detected to be BLOB/Graphic fields will automatically display the contents of the column (when the column is entered or clicked).

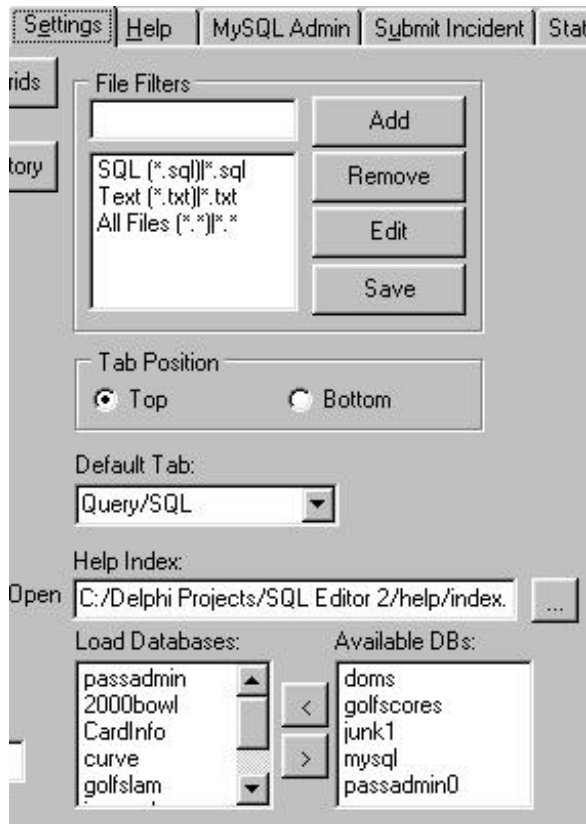
Auto-Show Memo Fields: When checked, columns detected to be Memo type fields will automatically be displayed in a memo control (when the column is entered or clicked).

Auto-Run Key: If checked, the associated key can be used to execute a query. For example, if the specified key is "F5", typing a query and pressing the F5 key will execute the query. For more info, see the Submitting Queries section of this document.

Display NULL Columns as: When selected, null columns will be displayed with the specified placeholder instead of a blank value. This option is used to make it easier to differentiate between empty string values and null values.

Keep Session Log: When checked, a log of interesting events is maintained during the session. See the Stats/Log tab for more information. Note: the log is not automatically written to disk, it is simply displayed for viewing purposes. If you wish to save the log, you must export it to a file manually (this can be accomplished by right-clicking the log and selecting "Save Session Log to File").

File Filters: The filters listed in the File Filters box are available in the Open Dialog (i.e. File → Open In Query Tab). User-defined filters can be maintained using the Add, Remove, Edit, and Save buttons.



Tab Position: Defines where the tabs are to be displayed.

Default Tab: Defines the tab that will be active next time urSQL is started.

Help Index: Specifies the location of the urSQL HTML-based help file.

Load Databases: [MySQL Only] Lists the databases that should be shown in the MySQL Admin tab.

Available DBs: [MySQL Only] Lists all of the databases available for loading.

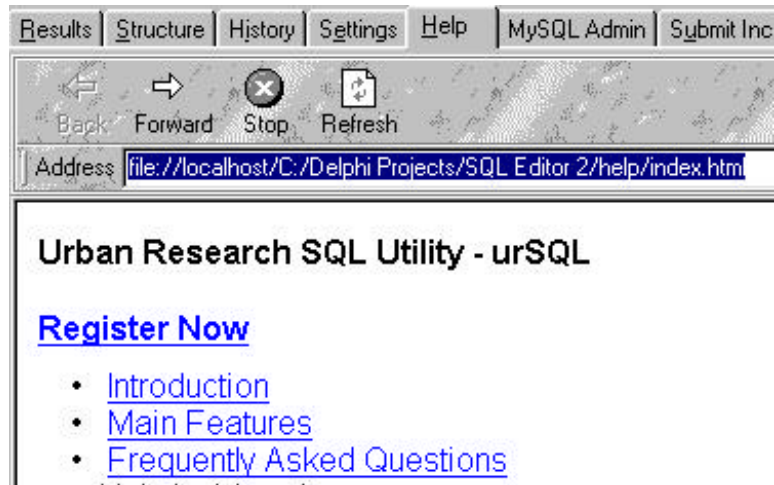
Note: The Load Databases list should only contain the databases you wish to administer for this particular server/connection. The reason for specifying the Load Databases is to reduce the processing time necessary to build the tree view when opening the MySQL Admin tab.

The Help Tab

The Help Tab contains a simple HTML-based browser that can be used to view basic urSQL documentation.

The standard browser-like controls are used to navigate through the help files.

The help-viewer is designed for viewing very basic HTML-based files. It is not designed for World-Wide Web navigation.



The MySQL Admin Tab




The MySQL Admin tab provides basic database maintenance functions (currently for MySQL Only).

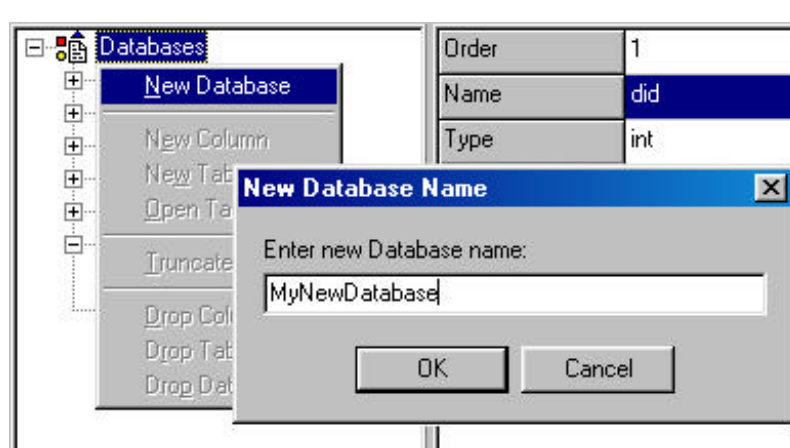
Note: Index maintenance is not currently supported.

Query/SQL	Results	Structure	History	Settings	Help	MySQL Admin	Submit Incident	Stats/Log																																																	
<div><div>Databases<ul style="list-style-type: none">passadmin2000bowl<ul style="list-style-type: none">Tables<ul style="list-style-type: none">bowls<ul style="list-style-type: none">Columns<ul style="list-style-type: none">bidbowlteam1team2</div><div><table><thead><tr><th></th><th>Field</th><th>Type</th><th>Size/Vals</th><th>Null</th><th>Key</th><th>Default</th></tr></thead><tbody><tr><td>1</td><td>bid</td><td>tinyint</td><td>4</td><td></td><td>PRI</td><td></td></tr><tr><td>2</td><td>bowl</td><td>varchar</td><td>32</td><td></td><td></td><td></td></tr><tr><td>3</td><td>team1</td><td>tinyint</td><td>4</td><td></td><td></td><td>0</td></tr><tr><td>4</td><td>team2</td><td>tinyint</td><td>4</td><td></td><td></td><td>0</td></tr><tr><td>5</td><td>house</td><td>tinyint</td><td>4</td><td></td><td></td><td>0</td></tr><tr><td>6</td><td>spread</td><td>decimal</td><td>4,2</td><td></td><td></td><td>0.00</td></tr></tbody></table></div></div>										Field	Type	Size/Vals	Null	Key	Default	1	bid	tinyint	4		PRI		2	bowl	varchar	32				3	team1	tinyint	4			0	4	team2	tinyint	4			0	5	house	tinyint	4			0	6	spread	decimal	4,2			0.00
	Field	Type	Size/Vals	Null	Key	Default																																																			
1	bid	tinyint	4		PRI																																																				
2	bowl	varchar	32																																																						
3	team1	tinyint	4			0																																																			
4	team2	tinyint	4			0																																																			
5	house	tinyint	4			0																																																			
6	spread	decimal	4,2			0.00																																																			

The list of databases corresponds to the list of Load Databases found on the Settings Tab. In order to save processing time, tables and columns are not enumerated until requested.

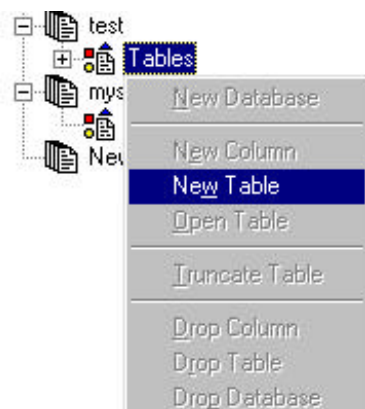
General Navigation Notes

When a database entry is expanded, an empty  Tables graphic will appear as a new branch under the selected database. The list of tables will not be generated until the  Tables graphic is selected and double-clicked. Once the list of tables has been generated, a + will appear to the left of the  Tables graphic.



Creating a Database:

1. Select and Right-Click the root Databases icon
2. From the pop-up menu, select New Database
3. Enter a the new database name and Click OK.

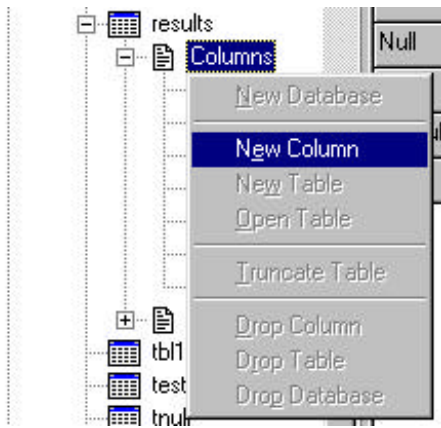


Creating a Table:

1. Select and expand the desired database
2. Select and Right-Click the Tables graphic
3. From the pop-up menu, select New Table.

Dropping a Table:

1. Select and expand the desired database
2. Select and expand tables
3. Select and Right-Click the table to drop
4. Select Drop Table
5. Confirm that you wish to drop the table



Adding a Column:

1. Select and expand the desired database
2. Select and expand the Tables graphic
3. Select and expand the desired table
4. Select and Right-Click the Columns graphic
5. From the pop-up menu, select New Column
6. Enter column info in grid
7. Click Commit/Alter to save the new column

Modifying a Column:

1. Select and expand database
2. Select and expand table
3. Select and expand columns
4. Select the desired column in the tree
5. Click the Edit Column button
6. Modify the column properties in the grid
7. Click Commit/Alter to save column changes

Dropping a Column

1. Select and expand the desired database
2. Select and expand the Tables graphic
3. Select and expand the desired table
4. Select and expand the Columns graphic
5. Select and Right-Click the column to drop
6. From the pop-up menu, select Drop Column
7. Confirm the column drop

Submitting an Incident

The easiest and best way to submit incidents, issues, and questions regarding urSQL is by using the Submit Incident tab (if your computer is connected to the Internet). Using the Submit Incident feature helps ensure that basic program information is automatically sent to Urban Research technical staff.

Information such as current Date/Time, urSQL Version, connected DSN, connected Server version, connection status, supporting files (and versions), and registration information are automatically included when using the Submit Incident tab.

To submit an incident, simply:

1. Click/Select the Submit Incident tab
2. Enter your email address
3. Select a Severity
4. Select a Priority
5. Enter a description of the problem, question, or incident
6. Click the Send Info button

From:	The email address that will be used by Urban Research support staff to respond to your incident.
Severity:	The severity of the incident.
Priority:	The priority of the incident.
Save Copy as a Local Text File:	When checked, this option will open a Save Dialog. The statistics information will be saved to the path specified by the Save Dialog selection.
Include Statistics:	When checked, the information from the Stats/Log tab will be summarized and included with the incident information sent to Urban Research.
Send Info:	Clicking this button initiates sending the incident (requires Internet).
Save To File:	Save the incident info directly to a local file.

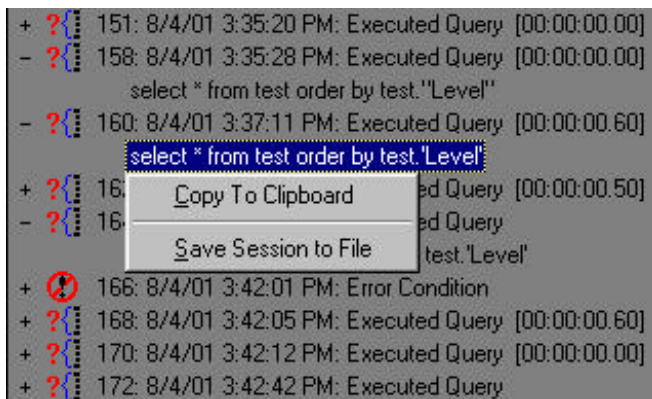
The Stats/Log Tab

The Stats/Log tab contains read-only information regarding the urSQL statistics and current session log.

The top half of the tab displays urSQL stats in real-time. Statistics are updated once every second.

The bottom half of the tab displays an activity log, listing events that have occurred during the current urSQL session (events that have transpired since urSQL was started). Individual log items can be expanded to display log details. Each query is logged with the query text and elapsed execution time. Log entries can be copied to the clipboard and the entire session log file can be saved to a file.

To access the log options, right-click on a log entry and select an option from the pop-up menu.

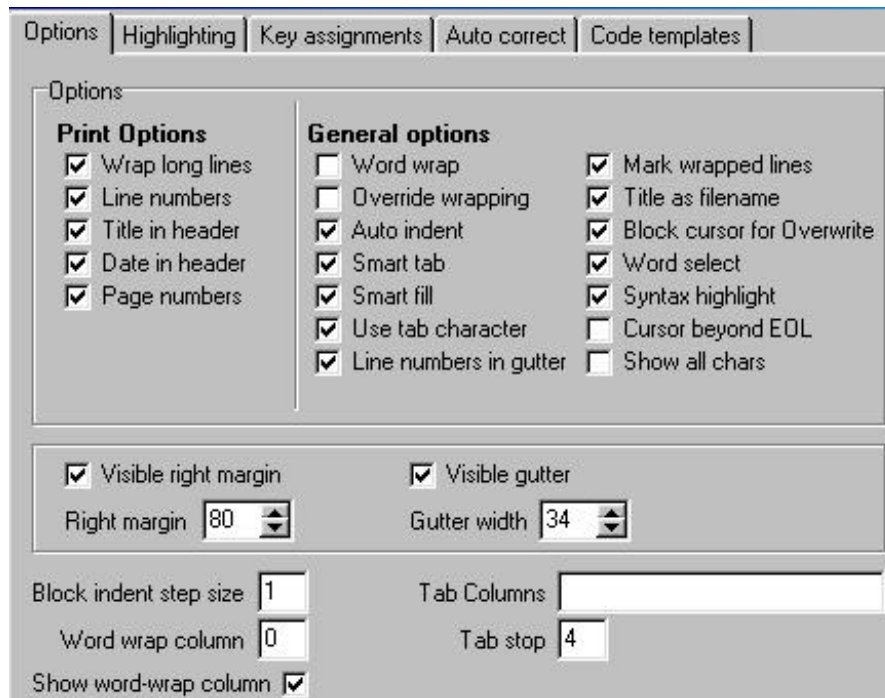


Configuring the Query Memo(s)

The Query Memo controls have many options that can be configured and/or customized.

Options

Many of the options are self-explanatory, the others are described here:



Options | Highlighting | Key assignments | Auto correct | Code templates

Options

Print Options

- ☒ Wrap long lines
- ☒ Line numbers
- ☒ Title in header
- ☒ Date in header
- ☒ Page numbers

General options

- ☐ Word wrap
- ☐ Override wrapping
- ☒ Auto indent
- ☒ Smart tab
- ☒ Smart fill
- ☒ Use tab character
- ☒ Line numbers in gutter
- ☒ Mark wrapped lines
- ☒ Title as filename
- ☒ Block cursor for Overwrite
- ☒ Word select
- ☒ Syntax highlight
- ☐ Cursor beyond EOL
- ☐ Show all chars

☒ Visible right margin ☒ Visible gutter

Right margin Gutter width

Block indent step size Tab Columns

Word wrap column Tab stop

Show word-wrap column ☒

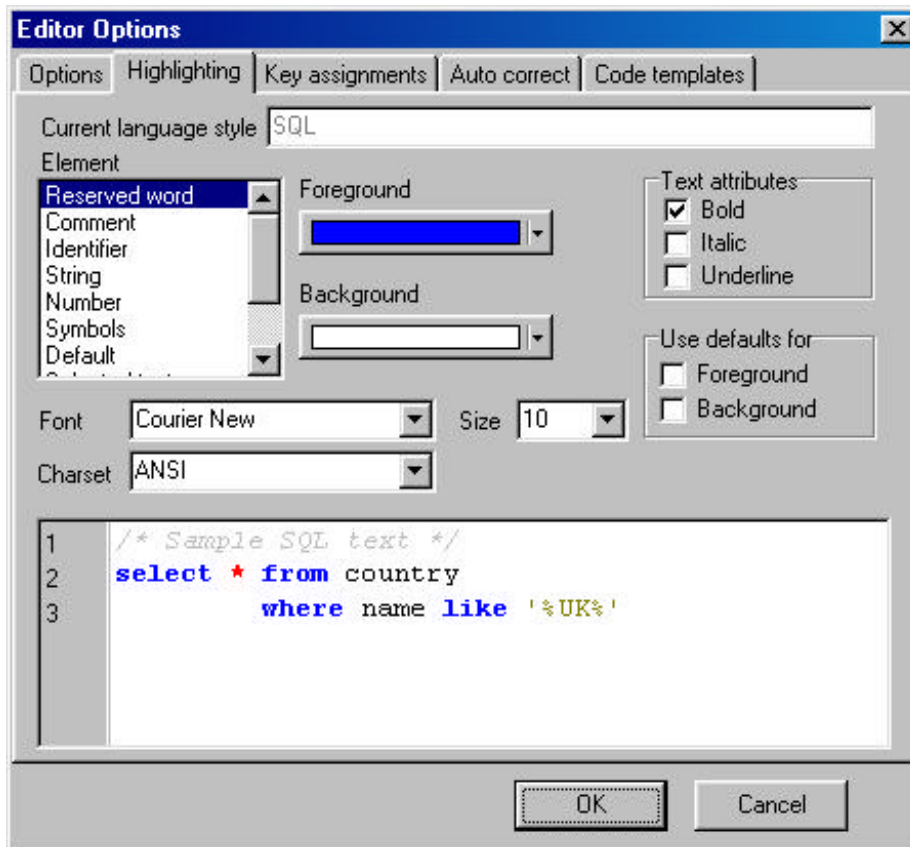
Auto Indent: Automatically indent each line to same indentation as the previous line.

Smart Tab: Automatically tab to the same tab-stop as the previous line.

Smart Fill: Use a combination of tabs and spaces to fill indents (note: all spaces are used if this option is off).

Highlighting

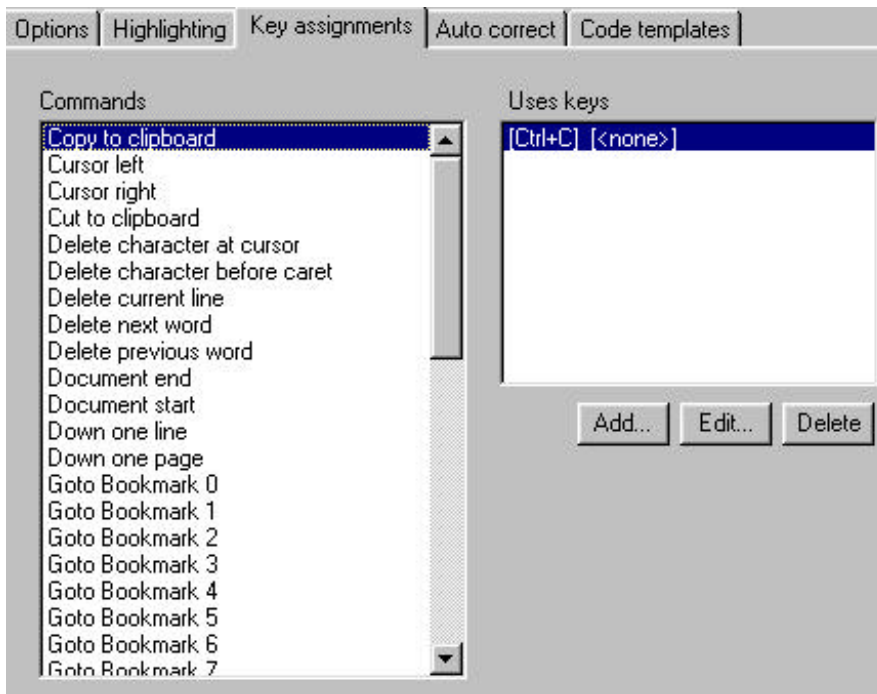
The SQL Syntax can be customized by selecting an item from the Elements list and setting the properties. The Font, Char set, and Size apply to the entire Query Memo.



Elements are previewed in the sample Query Memo in the bottom half of the tab.

Key Assignments

Custom key assignments can be configured using the Key Assignments tab.



To customize and existing command:

1. Select the command to modify
2. Click Edit
3. Use the prompts to define the new key or key combination

Auto Correct

Auto Correct items can be used to replace a defined string with specified alternative. This feature is often used to automatically convert commonly misspelled words to an appropriate properly spelled alternative. In the example below, the text "**selct**" will be replaced by "**select**".

Options | Highlighting | Key assignments | **Auto correct** | Code templates

Replace	With
{c}	@
{r}	®
{tm}	™
aeselect	select
fron	from
joint	join
selct	select
slect	select
teh	the
whers	where
whete	where

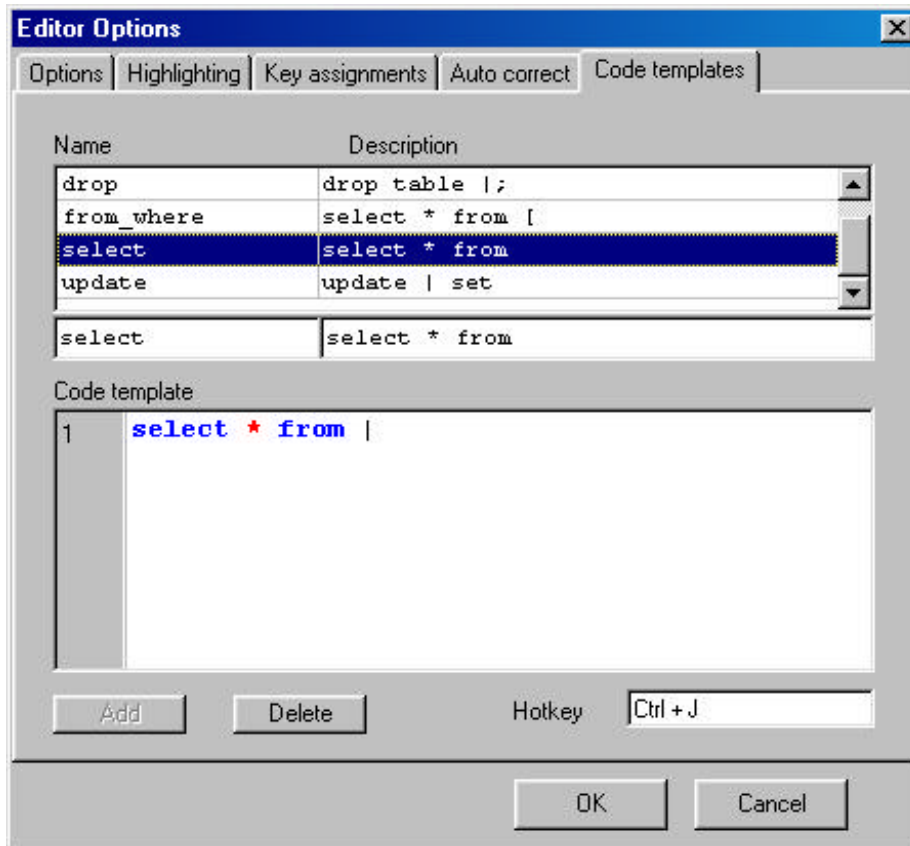
Act key(s)

The Act Keys are the keystrokes that initiate the Auto Correct handling.

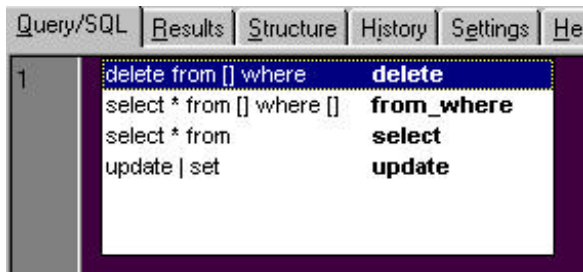
Code Templates

Code Templates can be use to create shortcuts to common code snippets.

The special character | is used to specify where the cursor should be after inserting the Code Template code. For example, in the sample below, the cursor will be placed one space after the "from" in "select * from ".



To use a Code Template, press the Hotkey combination (default is Ctrl+J) anywhere in a Query Memo and the list of Code Templates will be displayed and ready for selection.

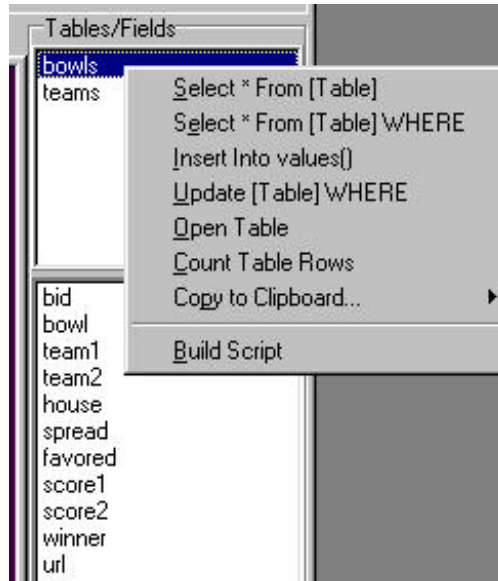


When a template is selected, the appropriate text will be inserted at the cursor and the cursor will be moved to the first | in the Code Template.

Miscellaneous Menus

Tables Popup Menu

The first several options in the Tables Popup Menu are common queries. When a query is selected from the Tables Popup Menu, the Active Query Memo is cleared and the text of the selected query is displayed in the Active Query Memo.



The string [Table] is a placeholder and will be replaced by the selected table in the actual query.

Note: If the Auto-Run Queries option is checked, the query will automatically be executed when selected from the Tables Popup Menu.

Open Table: Simply opens the selected table for editing by issuing a "SELECT LIVE * FROM [TABLE]" query.

Count Table Rows: Issues a COUNT(*) FROM [TABLE] query for the selected table.

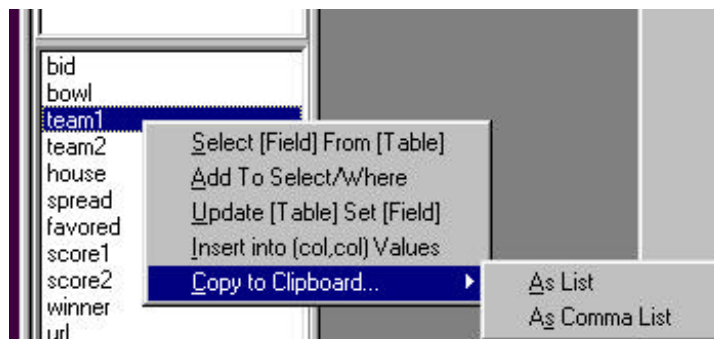
Copy to Clipboard: The selected table name can be copied to the clipboard, as well as a list of all

tables.

Build Script: [MySQL, MS Access, and MSSQL Only] Generates a CREATE TABLE script for the selected table.

CAUTION: The queries selected from the Tables/Fields popups automatically clear the contents of the currently Active Query Memo and add the generated query. The text cleared from the Active Query Memo CANNOT be undone.

Fields Popup



The Fields Popup is very similar to the Tables Popup with the distinction that the queries are specific to columns instead of tables.

The string [Field] is automatically replaced by the selected field or fields and the string [Table] is automatically replaced by the name of the selected table.

Tip: Multiple items can be selected from the Fields list for querying.

urSQL Syntax and Features

Some commands for controlling urSQL can be typed directly into a Query Memo. This section describes the syntax of the urSQL-specific commands and options.

Executing Multiple Statements

To run multiple statements in urSQL, each statement must be separated by a semi-colon (;). For example:

```
insert into orders values(null,1,'Order 1',101);
insert into orders values(null,3,'Order 2',202);
insert into orders values(null,4,'Order 3',404);
```

urSQL will submit each insert statement in succession.

Retrieving Editable (Live) Result Sets

The LIVE keyword can be used in order to edit the results of a query in the urSQL Results Grid. The LIVE keyword is inserted immediately after the SQL reserved word SELECT. For example, to retrieve the contents of the CUSTOMERS table for editing, you might issue the following query:


```
select live * from customers
```

The LIVE keyword tells urSQL to attempt to retrieve a writable result set.

Note: The query will only be successful if urSQL can retrieve a live result set. Of course many queries are not editable by definition. Result sets generated by queries that join multiple tables CANNOT be edited. If a live result set cannot be returned, an error will be generated.

Editing Results

If you've successfully submitted a querying using the LIVE keyword, the fields in the Results Grid can be modified. To modify a field:

1. Submit the LIVE query
2. Click on the field to modify
3. Press the F2 key or the Edit button  on the DB Toolbar
4. Modify the value
5. Move the cursor to a new row or click the Commit button  on the DB Toolbar

Scripting

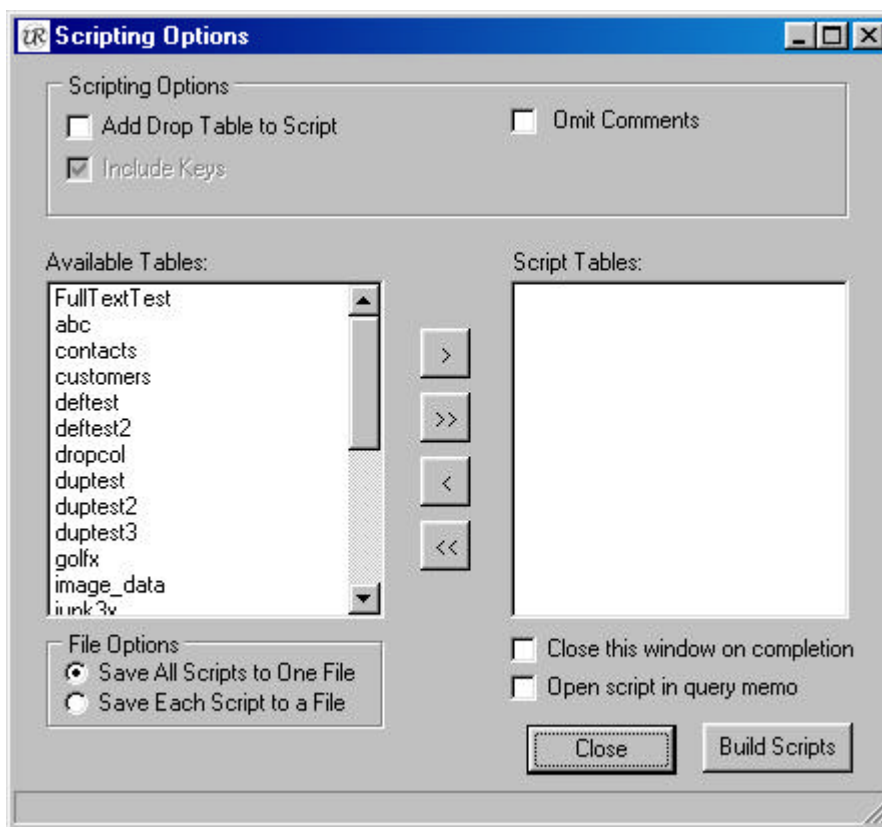
urSQL can build CREATE TABLE scripts for some databases (ie MySQL, MSSQL, MS Access).

There are two ways urSQL can build a script:

- 1) Tables Popup Menu
- 2) Options Menu → Build Scripts...

To build a script for an individual table, simply select the table in the Tables list, right-click, and select Build Script from the popu menu. The generated script will appear in the active Query Memo.

To build scripts for multiple tables, from the Main Menu select Options → Build Scripts...



Add Drop Table to Script: Adds a drop table statement before each CREATE TABLE statement in the script.

Include Keys: Includes index information in the CREATE TABLE statement (note: this option is always checked and cannot be modified).

Omit Comments: By default urSQL will add a basic comment before each CREATE TABLE statement. By selecting the Omit Comments box, the comments will NOT be added to the script.

Available Tables: A list of tables available for scripting (current database).

Script Tables: A list of tables that will be scripted.

Save to One File: All scripts will be appended to a single file.

Each Script to a File: Each CREATE TABLE script will be written to an individual file with the same name as the table name.

Close window on completion: If selected, the scripting dialog will be closed after scripts have been generated.

Open script in query memo: If selected, the generated script will automatically be opened in the active query memo.

Close: Clicking the Close button will close the scripting dialog without performing any scripting.

Build Scripts: Launches the scripting process.

urSQL Export Operator (:>>)

The results of a query can be exported (or piped) to a file using the urSQL Export Operator and syntax.

Note: An alternative to the Export Operator is right-clicking the Results Grid and selecting the Export Option.

Usage Summary:

```
Query :>> @outfile=path [options]
```

Simply, add the Export Operator (:>>) after the query, followed by the export options. Each export option is identified by an @ symbol followed by the specific option.

Options:

There are two types of options, stand-alone, and argument. Stand-alone options are flags, that when present turn on or off the option (example: @quoted). Argument options are options that take an argument or definition. Argument options are followed by an equal symbol (=) and the argument or definition.

```
@outfile=c:\path\to\outfile.dat
@field delim=xxx
@row delim=xxx
@quoted
@use single quotes
@columns enclosed by=xxx
@comment=xxx
@overwrite
@create insert
@enum col names
```

Caution: Do NOT insert spaces around the '=' symbol. The above syntax is very sensitive.

@outfile

Specifies the path to the file where the query results will be written.

@overwrite

When present, if the file specified by @outfile already exists, it will be overwritten. If the @overwrite option is NOT specified and the file exists, nothing is written to disk.

@field delim=xxx

Replace xxx with the character or characters to separate each field value.

@row delim=xxx

Replace xxx with the character or characters to separate each row.

@use single quotes

Use single quotes ('___') to quote character columns. Default is double quotes ("___").

@create insert

Tells the exporter to create a text file of INSERT statements for the specified query results. Each insert statement will be delimited using the @row delim option. @enum col names tells the exporter to enumerate each column (i.e.: insert into (enum1,enum2,etc)).

@comment=xxx

The text string specified by xxx is inserted at the beginning of the export file as a comment. Do not quote the comment text. The following special variables can be included in the comment text and will be expanded as defined:

Variable	Expands To
\$date	Current date (format specified by local short date).
\$datetime	Current date and current time (format specified by local short date).
\$getdate(format)	Expands to the current date using the format specified by the format string.
\$basic	Includes basic information about the exported query.
\$mysql-load	Expands to an appropriate MySQL LOAD DATA INFILE statement.

Common date formats for use with \$getdate():

Common Date Formats:

```

m      = Display month number (1-12)
mm     = Display month number w/leading zero
mmm    = Display abbreviated month (Jan,Sep,Etc)
d      = Display day of month
dd     = Display day of month w/leading zero
ddd    = Display day of week abbreviated (Mon,Thu,Etc)
yy     = Display two-digit year
yyyy   = Display four-digit year
h      = Displays the hour without a leading zero (0-23)
hh     = Displays the hour with a leading zero (00-23)
n      = Displays the minute without a leading zero (0-59)
nn     = Displays the minute with a leading zero (00-59)
s      = Displays the second without a leading zero (0-59)
ss     = Displays the second with a leading zero (00-59)

```

Examples:

1. Export the contents of the 'customers' table to the file 'c:\sql\data\customers.dat'. The exported file should contain one record per line with each field separated by a comma.

```

select * from customers :>>
@outfile=c:\sql\data\customers.dat
@overwrite
@field delim=,
@row delim=\r\n

```

2. Create a script (c:\sql\data\customers.sql) of INSERT statements for the customers table. Each INSERT statement will be separated by a semi-colon, carriage return, and line feed:

```

select * from customers :>>
@outfile=c:\sql\data\customers.sql @overwrite
@create insert
@enum col names
@row delim=;\r\n

```

3. Export the results of a join to a comma-delimited text file:

```

select o.oid, o.summary, o.total, c.name, c.address1, c.address2, c.zip
from customers c
left join orders o on o.cid = c.cid
where
c.cid = 1
order by o.oid asc :>>
@outfile=c:\sql\data\corders.txt @overwrite
@field delim=,
@row delim=\r\n
@comment=\/\* Exported $getdate(ddd, mmm dd, yyyy \@ hh:nn:ss) \*\/

```

4. Create tables, insert data, and export to a text file (MySQL):
(If you have MySQL, you can use the following example to create two very basic and poorly designed tables. This code will tell urSQL to:

- a. Create the customers table
- b. Create the orders table
- c. Populate the customers table
- d. Populate the orders table
- e. Export the results of joining the customers and orders tables

Please note that this example is designed ONLY to show the export features and it has no practical value.)

```

drop table if exists customers;
create table customers (
  cid integer not null primary key auto_increment,
  name varchar(32),
  address1 varchar(32),
  address2 varchar(32),
  zip varchar(10),
  other varchar(48)
);

drop table if exists orders;
create table orders (
  oid integer not null primary key auto_increment,
  cid integer not null,
  summary varchar(48),
  total integer
);

insert into customers values(null,'Customer 1','1 Customer Way','Apt. 1','55411','');
insert into customers values(null,'Customer 2','2 Customer Way','Apt. 2','55412','');
insert into customers values(null,'Customer 3','3 Customer Way','Apt. 3','55413','');
insert into customers values(null,'Customer 4','4 Customer Way','Apt. 4','55414','');
insert into orders values(null,1,'Order 1',101);
insert into orders values(null,3,'Order 2',202);
insert into orders values(null,4,'Order 3',404);

select o.oid, o.summary, o.total, c.name, c.address1, c.address2, c.zip
  from customers c
    left join orders o on o.cid = c.cid
  where
    (c.cid > 0) and (! isnull(o.oid))
  order by o.oid asc :>>
@outfile=c:\sql\data\corders2.txt @overwrite
@field delim=,
@row delim=\r\n
@comment=\\/* $basic \*/

```

Appendix A - The ursqlcq.ini File

The ursqlcq.ini file is copied to the Windows directory during the installation process. urSQL reads this file to determine what keywords should be considered SQL commands. An SQL command is an SQL statement that DOES NOT return a result set (ie DELETE).

Different databases have different proprietary commands and urSQL does not inherently know every available command. The ursqlcq.ini file can be used to add commands. urSQL attempts to return a result set for any unknown query or SQL statement. If the statement (ie DELETE) does not return a result and urSQL isn't aware of this, a cursor error will be generated. NOTE: The command is still passed to the database server, even if a cursor error is displayed.

To avoid the cursor error, simply add the command to the list of commands in the ursqlcq.ini file.

Sample ursqlcq.ini File:

```
[commands]
create=
delete=
drop=
insert=
update=
use=
alter=
load=

[select]
select=
```

The [MSSQL Structure Queries] section is used to extract schema information from MSSQL 6.5 servers. Please note that this section is deprecated and no longer used for MSSQL 7.x.

Appendix B - MySQL

This appendix provides information about how to connect urSQL to MySQL. Note that as urSQL has evolved, MySQL has been the most popular and most frequently used database...



About MySQL

MySQL is an Open Source database server developed, maintained, and supported by MySQL AB. MySQL AB is a Swedish company that owns the copyright to the MySQL source code and the MySQL trademark. The main MySQL website is <http://www.mysql.com> (there are no substitutes).

MySQL Recommended Reading

The most current and [arguably] the best MySQL resource is the MySQL manual, available on the web at <http://www.mysql.com/documentation>.

An excellent supplemental reference to the above manual is the book titled, "MySQL" by Paul DuBois, published by New Riders (ISBN 0-7357-0921-1).

Connecting urSQL to MySQL

urSQL uses the MyODBC driver to communicate with MySQL servers. The MyODBC driver can be downloaded from the MySQL website (<http://www.mysql.com/downloads/api-myodbc.html>).

Once you've installed MyODBC, additional details about installing and configuring a MyODBC DSN can be found at <http://www.urbanresearch.com/ursql/urodbc1.php>.

Version Statement

urSQL is known to work with the following versions of MySQL:

MySQL Server **3.23.xx** (and higher)

Note that urSQL does work with MySQL versions prior to 3.23. However, the MySQL Admin functions do not work in MySQL versions before 3.23.xx.

The current version of MyODBC should be used when connecting to urSQL. At the time of this writing, the most current version of MyODBC is 2.50.38 (see link above for downloading MyODBC).

Special Features

urSQL has several features that are unique to and only work with MySQL servers.

MySQL Info

Two menu items appear in the View menu when connected to a MySQL server:

- Main Menu → View → Server Status
- Main Menu → View → MySQL Variables

MySQL Admin

The urSQL MySQL Admin tab is only present when connected to a MySQL server. Please see the **MySQL Admin Tab** subsection in the **User Interface** section of this document

Scripting

urSQL can generate CREATE TABLE scripts for MySQL tables. When connected to a MySQL database server, a **Build Scripts...** item appears on the Options Menu and a **Build Script** option also appears in the Tables pop-up menu.

Common Issues

The MySQL database server employs a proprietary authentication scheme that matches the User, Password, and Client Host. This means that you can only connect from a client computer that has been authorized. This is a common source of questions and headaches when first using MySQL. It is advisable to become familiar with the MySQL security model. Further information is available in the MySQL manual at <http://www.mysql.com/documenation>. The MySQL book by Paul DuBois also explains the MySQL security system (Chapter 11 General MySQL Administration -- see subsection Managing User Accounts).

See also:

http://www.mysql.com/doc/P/r/Privilege_system.html

<http://www.mysql.com/doc/P/r/Privileges.html>

http://www.mysql.com/doc/A/c/Access_denied.html

<http://www.mysql.com/doc/G/R/GRANT.html>

Known Issues

MySQL user information is controlled by tables in the mysql database. One of the tables is named 'user'. The odbc driver does not properly return a LIVE result set because ODBC considers **user** to be a reserved word. To work-around this problem, you must enclose the user table in quotes (NOTE: this only applies if you are using the urSQL LIVE keyword):

```
select live * from 'user'
```

Appendix C - Microsoft SQL Server

This appendix provides information about how to connect urSQL to Microsoft SQL Server (aka MSSQL).

About MSSQL

MSSQL is Relational Database Management System developed, distributed, and supported by Microsoft. The main MSSQL website is <http://www.microsoft.com/sql>.

Connecting urSQL to MSSQL

urSQL uses the Microsoft SQL ODBC driver to communicate with MSSQL servers. In order to connect urSQL to an MSSQL database server, ***you must install the Microsoft SQL Server client libraries and ODBC driver***. You cannot by-pass MSSQL client licensing by using urSQL.

Version Statement

urSQL is known to work with the following versions of MSSQL:

MSSQL Server **6.5**
MSSQL Server **7.x**
MSSQL Server **2000**

Special Features

urSQL Features unique to MSSQL.

Scripting

urSQL can generate CREATE TABLE scripts for MSSQL tables. When connected to an MSSQL database server, a **Build Script** item appears on the Tables popup menu.

Manually Installing SQLDMO

(This section is included for reference only. It is NOT necessary to manually install SQLDMO as it is automatically installed with SQL Server and SQL Server Client.)

urSQL uses the SQLDMO.SQLServer object to connect to Microsoft SQL Server 7.x. Typically, the SQLDMO files are installed with an instance of SQL Server or the SQL Server Client. However, the SQLDMO can be manually installed in order to gain a minimal installation. Please note that this does not circumvent the Microsoft SQL Server Client Access Licensing policy.

1. On the client machine create the following directory structure:

```
c:\mssql7\
c:\mssql7\binn\
c:\mssql7\binn\Resources\
c:\mssql7\binn\Resources\1033\
```

2. Copy the following files to the c:\mssql7\binn\ directory on the client (the files can be copied from a working MSSQL 7.x installation or from the MSSQL 7.x CD):

```
sqldmo.dll
sqlresld.dll
sqlsvc.dll
w95scm.dll
```

3. Copy the following files to the c:\mssql7\binn\Resources\1033\ directory on the client:

```
sqldmo.rll
sqlsvc.rll
```

4. Open a command prompt [on the client] and change to the c:\mssql7\binn\ directory
5. Register the sqldmo.dll file using regsvr32 (note regsvr32.exe is usually in the \$Windows\System directory):

```
Win9x:    C:\MSSQL7\BINN> c:\windows\system\regsvr32 sqldmo.dll
WinNT:    C:\MSSQL7\BINN> c:\winnt\system32\regsvr32 sqldmo.dll
```


Appendix D - Microsoft Access

This appendix provides information about how to connect urSQL to Microsoft Access.

About Microsoft Access

Microsoft Access is a desktop database system developed, distributed, and supported by Microsoft. The main Microsoft Access webpage is:

<http://www.microsoft.com/office/access/default.htm>.

Connecting urSQL to Microsoft Access

urSQL uses the Microsoft Access ODBC driver to communicate with MS Access servers. In order to connect urSQL to an MS Access database server, ***you must install the Microsoft Access ODBC driver.***

There are two ways to connect to an MS Access database:

1. By Alias
2. By Directory

Please see the urSQL Tour section of this document for details.

Version Statement

urSQL is known to work with the following versions of MS Access:

MS Access **2.0** and higher

Special Features

urSQL Features unique to Microsoft Access.

Scripting

urSQL can generate CREATE TABLE scripts for MS Access tables. When connected to an MS Access database, a **Build Scripts...** item appears in the Options menu and on the Tables popup menu.

Appendix E - Paradox

This appendix provides information about how to connect urSQL to a Paradox database.

About Paradox

Paradox is a desktop database system developed, distributed, and maintained by Corel. The Paradox website is somewhere at <http://www.corel.com>.

Connecting urSQL to Paradox

urSQL uses the native Paradox driver included with the Borland Database Engine.

Version Statement

urSQL is known to work with the following versions of Paradox:

Paradox 3.5 and higher (most testing done with Paradox 7.0)

Appendix F - Oracle

This appendix provides information about how to connect urSQL to Oracle.

About Oracle

Oracle is Relational Database Management System developed, distributed, and supported by Oracle Corporation. The main Oracle website is <http://www.oracle.com/>.

Connecting urSQL to Oracle

urSQL uses the Microsoft ODBC for Oracle driver to communicate with Oracle servers. In order to connect urSQL to an Oracle database server, ***you must install and use the Microsoft ODBC for Oracle driver. Do NOT use the Oracle ODBC driver. There is a known problem with the native Oracle ODBC driver that will cause urSQL to crash with an invalid page fault in IDODBC32.DLL.***

Recommended Driver: Microsoft ODBC for Oracle, version 2.573.6526.00 or higher.

Version Statement

urSQL is known to work with the following versions of Oracle:

Oracle 8i

Appendix G - PostgreSQL

This appendix provides information about how to connect urSQL to a PostgreSQL database.

About PostgreSQL

PostgreSQL is a relational database system developed, distributed, and maintained by PostgreSQL Incorporated. The PostgreSQL website is <http://www.postgresql.org>.

Connecting urSQL to PostgreSQL

urSQL uses the PostgreSQL ODBC driver to connect to PostgreSQL servers. The PostgreSQL ODBC driver can be freely downloaded from the PostgreSQL website. Further information is available at <http://odbc.postgresql.org/>.

Recommended Driver: PostgreSQL 6.50.00.00 or higher.

Version Statement

urSQL is known to work with the following versions of PostgreSQL:

PostgreSQL **7.0.2 and higher**

Appendix H - Interbase

Interbase support is still in testing and development.

It is possible to connect directly to an Interbase database. However, the tables and columns may not be displayed. You can still query tables, but you must know the table names and structures as urSQL may not be able to properly display this information.